

IN THE SPECIFICATION:

Please replace the specification with the enclosed substitute specification. A marked-up copy of the original specification is also enclosed.

Please insert the following paragraph after "BACKGROUND OF THE INVENTION" in the substitute specification.

A²
--Continuing data: This application is a division of Application no. 09/163,545 filed 9/30/98, which is a division of Application no. 08/482,569 filed 6/7/95, which is a division of Application no. 08/159,141 filed 11/30/93, now U.S. Patent No. 5,824,434.--

IN THE CLAIMS:

Please cancel claims 1-122 without prejudice or disclaimer.

Kindly add new claims 123-178 as follows:

A³
123. (New) A secondary battery comprising:
a negative electrode substantially comprising a negative electrode active material;
a positive electrode substantially comprising a

positive electrode active material, wherein said negative electrode and positive electrode are separated by a separator; and

an electrolyte or an electrolytic solution held between said negative electrode and said positive electrode, said secondary battery comprising:

A3 a film which covers a surface of said negative electrode and through which an ion in a battery reaction is able to pass.

124. (New) A secondary battery according to claim 123, wherein said film has a molecular structure or apertures comprising openings larger than the ion in the battery reaction.

125. (New) A secondary battery according to claim 123, wherein during charging said film has a molecular structure or apertures comprising openings through which the ion in the battery reaction is able to pass but said ion is not able to pass through the negative electrode active material deposited on said negative electrode during charging.

126. (New) A secondary battery according to claim 123, wherein said film is inert toward the electrolyte or electrolytic solution and said film cannot be dissolved by said electrolyte or electrolytic solution.

127. (New) A secondary battery according to claim 123, wherein said film has an electron donor.

128. (New) A secondary battery according to claim 127, wherein said electron donor of said film has an electron selected from the group consisting of an unpaired electron, a paired electron and a d-electron.

129. (New) A secondary battery according to claim 127, wherein said electron donor of said film has a π -electron.

130. (New) A secondary battery according to claim 127, wherein said electron donor of said film comprises at least one element selected from the group consisting of oxygen, nitrogen and sulfur.

131. (New) A secondary battery according to claim 129, wherein said electron donor of said film comprises at least one element selected from the group consisting of oxygen, nitrogen and sulfur.

132. (New) A secondary battery according to claim 123, wherein said film comprises a large ring compound.

133. (New) A secondary battery according to claim 123, wherein said film comprises a material having an aromatic ring structure.

134. (New) A secondary battery according to claim 123, wherein said film is a fluororesin.

135. (New) A secondary battery according to claim 123, wherein said film comprises a material having an ether linkage structure.

136. (New) A secondary battery according to claim 123, wherein said film comprises a compound having a carbonyl group.

137. (New) A secondary battery according to claim 123, wherein said film has comprises a compound wherein a phosphorus atoms and a nitrogen atoms are double-bonded to each other.

138. (New) A secondary battery according to claim 123, wherein said film comprises a glassy metal oxide.

139. (New) A secondary battery according to claim 123, wherein said film has a polymer structure.

140. (New) A secondary battery according to claim 123, wherein said film has a cross-linked polymer structure.

141. (New) A secondary battery according to claim 123, wherein said film comprises a conductive powder dispersion.

142. (New) A secondary battery according to claim 123, wherein said negative electrode active material is lithium or a lithium compound.

143. (New) A secondary battery according to claim 123, wherein said negative electrode active material is zinc or a zinc alloy.

144. (New) A secondary battery according to claim 142, wherein said surface of said negative electrode covered with said film is subjected to a lipophilic treatment.

145. (New) A secondary battery according to claim 143, wherein said surface of said negative electrode covered with said film is subjected to a hydrophilic treatment.

146. (New) A secondary battery according to claim 123, wherein at least a surface of said separator opposed to said negative electrode is covered with a material identical to that comprising said film.

147. (New) A secondary battery comprising:
a negative electrode substantially made of a negative electrode active material;
a positive electrode comprising a positive electrode active material, wherein said negative electrode and positive electrode are separated by a separator;

an electrolyte or an electrolytic solution held between said negative electrode and said positive electrode; and

at least one layer selected from the group consisting of a conductor layer, a semiconductor layer and an insulating layer, disposed between said negative electrode and said separator.

148. (New) A secondary battery according to claim 147, wherein said negative electrode is lithium or a lithium compound.

149. (New) A secondary battery according to claim 147, wherein said negative electrode is zinc or zinc alloy.

150. (New) A secondary battery according to claim 147, wherein said conductor or semiconductor layer comprises at least one element selected from the group consisting of C, Ni, Ti, Pt and Si.

151. (New) A secondary battery according to claim 147, wherein said layer is the insulating layer comprising at

least one insulator selected from the group consisting of a halide, a nitride and a carbide.

152. (New) A secondary battery according to claim 147, wherein said layer is in contact with said negative electrode active material.

153. (New) A secondary battery according to claim 147, wherein said layer is in contact with said separator.

154. (New) A secondary battery according to claim 147, wherein said layer covers at least a surface of said negative electrode active material adjacent to said separator.

155. (New) A secondary battery according to claim 147, wherein said layer is pressed and secured to a surface of said negative electrode active material.

156. (New) A secondary battery according to claim 147, wherein said layer covers at least a surface of said separator adjacent to said negative electrode.

157. (New) A secondary battery according to claim 152, wherein said layer is pressed and secured to said separator.

158. (New) A secondary battery according to claim 147, wherein said conductor layer comprises a carbon fiber having a specific area of $10 \text{ m}^2/\text{g}$ and a void ratio of at least 50%.

159. (New) A secondary battery comprising:

a negative electrode substantially made of a negative electrode active material;

a positive electrode substantially made of a positive electrode active material, wherein said negative electrode and positive electrode are separated by a separator; and

an electrolyte or an electrolytic solution held between said negative electrode and said positive pole, wherein

at least a surface of said positive electrode opposed to said negative electrode is covered with at least one layer selected from the group consisting of an insulating film, a semiconductor film and a composite film of an

insulating material and a semiconductor through which an ion in a battery reaction is able to pass.

160. (New) A secondary battery according to claim 159, wherein said insulating layer comprises a large ring compound.

161. (New) A secondary battery according to claim 160, wherein said large ring compound comprises at least one structure selected from the group consisting of a ring polyether, a ring polyamine, a ring polythioether, an azacrown ether, a ring thioether, a thiocrown ether, a cryptand, a cyclam, a cyclodextrin, a cyclofan, a phthalocyanin and a porphyrin.

162. (New) A secondary battery according to claim 159, wherein said insulating layer is a polymer of a derivative of an aromatic hydrocarbon.

163. (New) A secondary battery according to claim 162, wherein said derivative of the aromatic hydrocarbon is at least one derivative selected from the group consisting of naphthalene, anthracene, phenanthlene, naphthacene, pyrene,

triphenylene, perillene, picene, benzopyrene, coronene and ovalene.

164. (New) A secondary battery according to claim 159, wherein said layer is a fluoro-resin.

165. (New) A secondary battery according to claim 164, wherein said fluoro-resin has an ether bond.

166. (New) A secondary battery according to claim 159, wherein said insulating layer is an organic silicone resin compound.

167. (New) A secondary battery according to claim 159, wherein said insulating layer is an organic titanium polymer compound.

168. (New) A secondary battery according to claim 159, wherein said insulating layer is a polymer wherein a phosphorus atom and a nitrogen atom are alternately double bond to each other.

169. (New) A secondary battery according to claim 159, wherein said insulating layer is an inorganic glass comprising an inorganic oxide.

170. (New) A secondary battery according to claim 169, wherein said inorganic glass is combined with an organic polymer.

171. (New) A secondary battery according to claim 169, wherein said inorganic oxide comprises at least one element selected from the group consisting of silicon, titanium, aluminum, magnesium, zirconium, lead and calcium.

172. (New) A secondary battery according to claim 159, wherein said insulating layer is a carbide.

173. (New) A secondary battery according to claim 159, wherein said insulating layer is a nitride.

174. (New) A secondary battery according to claim 159, wherein said insulating layer is a halide.